

ABSTRACT

The present invention is directed to a process for preparing a solid composite having colloidal nanocrystals dispersed within a sol-gel matrix, the process including admixing colloidal nanocrystals with an amphiphilic polymer including hydrophilic groups
5 selected from the group consisting of -COOH, -OH, -SO₃H, -NH₂, and -PO₃H₂ within a solvent to form an alcohol-soluble colloidal nanocrystal-polymer complex, admixing the alcohol-soluble colloidal nanocrystal-polymer complex and a sol-gel precursor material, and, forming the solid composite from the admixture. The present invention is also directed to the resultant solid composites and to the alcohol-soluble colloidal nanocrystal-
10 polymer complexes.